

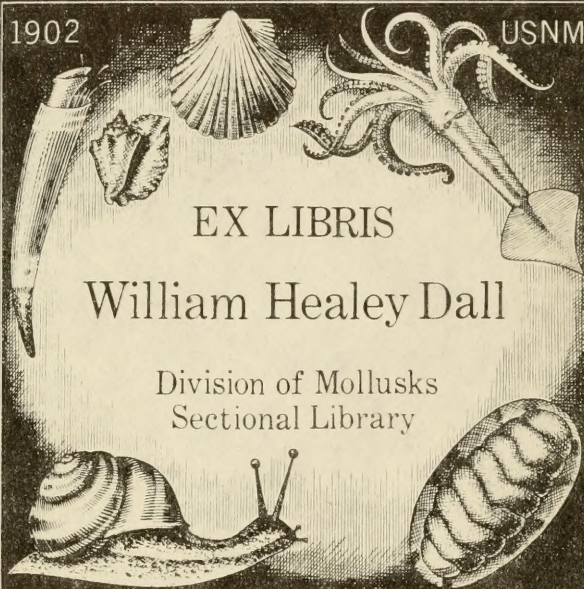
1902

USNM

EX LIBRIS

William Healey Dall

Division of Mollusks
Sectional Library





K-I-i CONR. 16/3

Division of Mollusks
Sectional Library

AMERICAN

Division of Mollusks
Sectional Library

MARINE CONCHOLOGY;

OR

DESCRIPTIONS AND COLOURED FIGURES

OF THE

SHELLS OF THE ATLANTIC COAST

OF

North America.

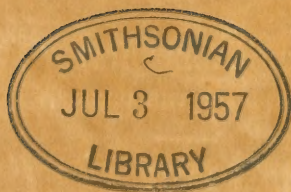
BY TIMOTHY A. CONRAD,

Member of the Academy of Natural Sciences of Philadelphia.

PHILADELPHIA:

PRINTED FOR THE AUTHOR.

1831.



PREFACE.

The following work is designed to supply a deficiency which has long been felt by the cultivators of American Natural History ; for while the quadrupeds and birds of our country have been described and figured with great fidelity and elegance, some other branches of Zoology have experienced comparative neglect. Among these is CONCHOLOGY, a science replete with interesting details, whether we examine the seemingly innumerable characters of the shells themselves, or turn our attention to the organized beings which inhabit them.

It is proposed, however, to limit the present undertaking to the *Marine Shells* inhabiting the coast of North America ; inasmuch as several able naturalists, especially Messrs. Say and Lea, are now occupied with our fresh water and land shells, the results of whose labours will doubtless supply all that may be requisite in these departments.

The North American sea shells have received more or less attention from nearly all the systematic writers on Conchology : many of the species were familiar to Linnaeus ; others were first noticed by Lamarck ; and Mr. Say, with his usual industry, has described a considerable number. The periodical publications of this country and of Europe contain various additional notices, and the interests of science seem now to require, that all these scattered details should be embodied in a systematic form, with corrections and additions suited to the present state of our knowledge.

The great attention which has been of late years given to Conchology, has necessarily removed much of the obscurity and corrected many of the errors of this science. Numerous shells which were formerly supposed to be different in specific characters, are now proved to be identical ; while others which were published as new, are found to have been well known to our predecessors.

Again, the scrutiny which is at present directed to the anatomical structure of the animals inhabiting shells, has given rise to the establishment of many new genera, and has tended, more than any other circumstance, to fix the distinctions of this science on a natural and permanent basis.

It is therefore proposed, in the present work, to adopt, with very few exceptions, the genera of Lamarck and Cuvier, together with such others as have been judiciously indicated by Sowerby, Blainville, Say &c.

It is designed to give brief descriptions, and accurate figures, of all the shells inhabiting the Atlantic coast of North America, and to publish them in *monographs*, each of which will embrace all the known species of a genus.

The great extent of our sea coast would lead us to conjecture, that many shells had hitherto escaped the observation of our Conchologists : such has proved to be the fact, and the author, in mentioning this circumstance, takes occasion to return his sincere thanks to those gentlemen, whose liberality has given him access to their collections, and thus rendered them subservient to the cause of science. To the Academy of the Natural Sciences of Philadelphia, he has to acknowledge particular obligations for the unreserved permission which has been granted him to publish the nondescript species in the collection of that institution.

In the descriptions of the bivalves I have followed some distinguished Conchologists in terming the distance between the anterior and posterior extremities of the shells, their length ; the height is from the opposite, or basal margin to the beak ; and the breadth is the greatest extent between the outer surface of the valves, when closed. I have also adopted Mr. Gray's term cartilage, for the substance which acts like a spring to separate the valves ; and the ligament is that which binds them together at the hinge margin.

Philadelphia April, 1831.

PECTEN.

GENERIC CHARACTER.

Shell bivalve, free, regular, inequivalve, eared ; beaks contiguous. Hinge toothless, with a trigonal pit for the cartilage. One muscular impression.

OBSERVATIONS.

Most of the shells of this perfectly natural and extensive genus are distinguished by their elegantly coloured markings, which are frequently extremely variable in the same species. They are all inequivalve, having one valve more convex than the other, although in a few instances the variation is scarcely perceptible. The inferior or lower valve is generally less coloured than the superior, and this character, together with the deeper sinus of the ear, will easily distinguish it from the other. Nearly all the species have either ribs or striæ, radiating from the beaks, and this, in connexion with their peculiar form, has originated the vulgar name of *fans*. The habits of the animal, and the regularity in shape, together with the substance of the shells, which are never of a coarse laminar structure, widely remove them from the *oysters*, with which they were confounded by Linnæus.

A byssus has been observed, in several species of this genus, to pass under the ear of the inferior valve, and they are by this slender process attached to rocks in deep water, but never, as the *Mytili* frequently are, to floating substances : others

possess the power of locomotion, either in the water, or when left by the tide, or cast by the waves on shore, as by a rapid action of the valves, they are enabled to travel down the sloping sands of the beach, and by the same means they move with celerity in the water, or rise at pleasure to the surface.

It might appear to almost every one conversant with the subject, that this genus was too natural to admit of any dismemberment ; but Schumacher, a Danish naturalist, has ventured to introduce into his system of Conchology two genera, formed out of the present one, under the names of *Amusium* and *Janira*, but they are, like many other genera which he has instituted, founded upon trivial distinctions.

To the present genus belongs the beautiful shell, well known as the scallop of the pilgrims.

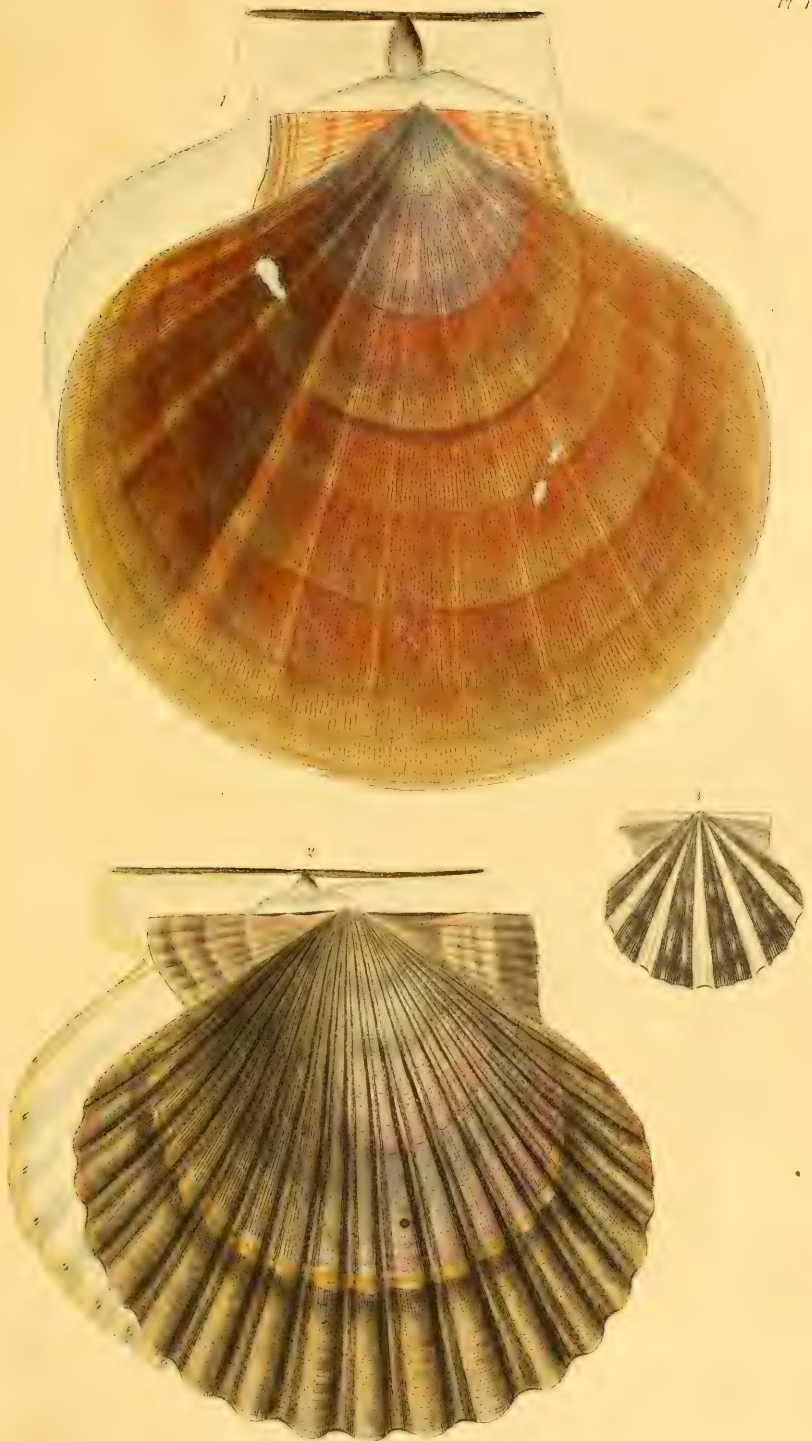
Several species, two of which are among the largest of the genus, occur in a fossil state in the Tertiary, or older *Pliocene* of Lyell, in Maryland and Virginia.

PECTEN MAGELLANICUS.

TAB. I, *fig.* 1.

SPECIFIC CHARACTER.

Shell large, orbicular ; superior valve dull red, with very numerous radiating striæ which are crossed by minute subscabrous wrinkles ; inferior valve nearly flat, whitish, with the striæ less distinct ; beaks purple ; within very entire.



SYNONYMA.

PECTEN MAGELLANICUS. *Lam. An. sans Vert. vol. 6, part 1, p. 165.*

OSTREA MAGELLANICA. *Gmelin.*

Dillwyn's Recent Shells, p. 250.

ICON. *Enc. Method. pl. 208, fig. 5.*

Cabinet of the Acad. Nat. Sciences, No. 1156.

OBSERVATIONS.

This fine shell is frequently six inches in length, and is one of the largest of the genus. The superior valve is occasionally marked with pale rays, and always with concentric bands, which are either of a lighter or darker tint than the general colour of the valve, the margin of which is ochraceous.

This species constantly inhabits deep water and abounds in Passamaquoddy Bay, where it is dredged up for the table, as the animal is edible, and much esteemed in the vicinity of its location. Dr. C. Pickering found two valves on the coast of Massachusetts.

That this is the shell which authors suppose to inhabit the Straits of Magellan, whence is derived the name of *Magellanicus*, I have no doubt, and if its name be not misapplied, it is a singular circumstance that it should inhabit seas so remote from each other, and yet be unknown on any intermediate part of the vast and continuous coast of America. Its presence, however, could not readily be detected, as dead shells are rarely cast upon the beach, even in the vicinity in which the species is common.

To Mr. Titian R. Peale I am indebted for specimens, and for the information which I have obtained respecting its locality on the coast of the United States. This gentleman obtained numerous perfect specimens, and introduced into our collections in this city, the only authentic individuals by which we could claim it as a North American species.

The figure is considerably reduced.

PECTEN CONCENTRICUS.

TAB. I. *fig.* 2, 3.

SPECIFIC CHARACTER.

Shell suborbicular, with from 18 to 20 elevated, rounded ribs, and numerous concentric wrinkles; inferior valve slightly ventricose or gibbous towards the umbo; ears large, and nearly equal.

SYNONYME.

PECTEN CONCENTRICUS. *Say. Journ. Acad. Nat. Sciences, vol. 2, p. 259.*

Cabinet of the Acad. Nat. Sciences, No. 1157.

OBSERVATIONS.

The colour of the upper valve is generally brown, with pale zones, and the lower valve yellowish with

pale brown zones, but it is occasionally nearly white and immaculate; in other specimens the ribs are spotted.

Besides the variety indicated by Mr. Say, which is more compressed and variegated, another occurs entirely black, with smaller ears, but of this I have seen only a few inferior valves. A third beautiful variety is represented in the smaller figure. It was found on the coast of Rhode Island by Lieut. Brown of Newport, and communicated to Mr. D. B. Smith of this city.

This shell is very common on the new Jersey coast, where numbers may be observed scattered along the beach, but Long Island Sound produces the largest and most beautiful specimens. The animal is eaten, and is comparable in flavour to the lobster. It is sold in the New York market, but as an article of food is scarcely known in Philadelphia.

On the coast of Long Island, where the flats or shoals extend to a considerable distance, and the water is about two feet deep, immense numbers of the young of this species may be observed swimming near the surface, which they are enabled to do by opening and closing the valves with great rapidity. My friend William R. Clapp informs me that he has frequently witnessed this interesting exhibition of activity, so strongly contrasting with the habits of the *Ostreadæ*, and other bivalve shells which have not the power of locomotion.

Before Mr. Say described this shell as a distinct species, it appears to have been confounded with *P. opercularis*, a common shell on the coast of Great Britain, but not hitherto found on this side the At-

lantic. D'Avila, therefore, when he asserted that it inhabits America, must have had the present species in view.

It inhabits the coast from Massachusetts to South Carolina, inclusive.

PECTEN PURPURATUS.

TAB. II, *fig.* 1.

SPECIFIC CHARACTER.

Shell suborbicular; ribs about 22, elevated, with transverse undulated purplish lines; interstices striated transversely; ears nearly equal.

SYNONYMES.

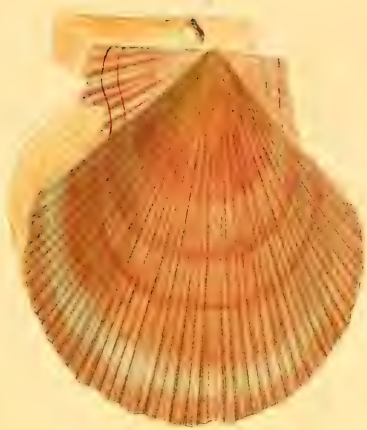
PECTEN PURPURATUS, *Lam. An. sans vert. vol. 6. part 1, p. 165.*

PECTEN DISLOCATUS, *Say, Journ. Acad. Nat. Sciences, vol. 2, p. 259.*

Cabinet of the Acad. Nat. Sciences, No. 1174.

OBSERVATIONS.

This shell is often elegantly variegated with black, white and purple. The internal zone noticed by Lamarck is frequently wanting, and the inner surface varies from purplish brown to white, without zone or spots. The ribs, in large and perfect specimens, are generally serrated at the sides.



There is an affinity between this and the preceding species, but besides the difference in the coloured markings, this has the superior valve less convex than the superior.

I found this species upon the coast of South Carolina, and on that of the Gulf of Mexico, near Mobile Point. Mr. Hyde suggested its identity with *Pecten purpuratus*; and a comparison of the Florida specimens with a fine series from South America, has confirmed his observation.

This shell has a very extensive range, occurring on the coast of Panama, and in Coquimbo Bay, in Chili, where the natives, who eat the animal, procure it abundantly in the surf. In this locality it occurs much larger than on the coast of Florida, and becomes thicker and more ponderous than is usual in the genus.

The largest specimen I have seen measures about four inches in length.

PECTEN PEALII.

TAB. II, *fig.* 1 2

SPECIFIC CHARACTER.

Shell ovate; dull red, varied with cinereous; ribs about 26, elevated, very rugose, and divided at the base by a longitudinal sulcus; interstices with each a scaly longitudinal stria; ears unequal.

Cabinet of the Acad. Nat. Sciences, No. 1400.

OBSERVATIONS.

I received this shell from Mr. T. R. Peale, who found several specimens at the mouth of a river on the coast of Maine.

This species is related to *P. Islandicus*, and has sometimes been confounded with it, but differs in having much fewer ribs, which are large, very rugose, and have few scales: the ribs of the former species, on the contrary, are small and densely furnished with erect scales. On none of the specimens collected by Mr Peale was any trace of those curious reticulated lines which are observed on a beautiful *Pecten* from the eastern coast, which has also been confounded with the present species, although the resemblance is only in the outline.

It is probable that this species, like some of its congeners, lives only in deep water, and is therefore seldom cast ashore by the surf in the most violent storms. *P. Magellanicus* is a remarkable instance of a shell abundant in deep water, and very rarely found cast upon the beach.

PECTEN ORNATUS.TAB. II, *fig.* 3.

SPECIFIC CHARACTER.

Shell subequivalve, compressed: ribs 30 to 36, alternately smaller, and subscabrous: one ear minute.

SYNONYMA.

PECTEN ORNATUS. *Lam. An. sans Vert. vol. 6, part 1, p. 176.*

OSTREA PELLUCENS. *Gmel.*

PECTEN. *Enc. Method. pl. 214, fig. 5.*

Lister, tab. 175.

Cabinet of the Acad. Nat. Sciences, No. 1166.

OBSERVATIONS.

This shell is generally of a pale yellow or ochraceous colour, with red angular spots, although Lamarck describes it as "red, with fuscous zones." Young shells have the ribs nearly smooth and seldom alternating in size.

Common on the coasts of East Florida and the West Indian Islands.

Lamarck observes that this is the *Ostrea pellucens* of Gmelin, but not of Linneus, who refers to Argenville, table 24, fig. H, for his *pellucens*, which Dillwyn believes to be *O. varia*. In the present uncertainty, therefore, with regard to the species intended by Linneus, I have adopted Lamarck's specific name as least likely to increase the confusion which exists in the nomenclature of this species. Dillwyn, in his Index to Lister's Conchology, observes that the *Ostrea crenulata* and *O. innominata* of Gmelin are both varieties of his *pellucens*, and have been constituted from the two figures in Lister, table 175, one of which is quoted by Lamarck for the present species.

PECTEN NODOSUS.

TAB. II, *fig.* 4.

SPECIFIC CHARACTER.

Shell with strong radiating striæ; ribs nine, thick, with vesicular nodes.

SYNONYMA.

PECTEN NODOSUS, *Lam. An. sans Vert. vol. 6. part 1, p. 170.*

OSTREA NODOSA. *Gmelin.*

PECTEN. *Enc. Method. pl. 210, fig. 2.*

Cabinet of the Acad. Nat. Sciences, No. 1153.

OBSERVATIONS.

The colour of this shell is generally reddish brown or orange, and Lamarck describes a variety of a small size, in which most of the nodules are white like small pearls. The nodes or vesicles of the ribs are, in its young state, entire, but they open as the shell increases in size.

This well known and distinctly characterized species inhabits the African, South American and West Indian seas; and upon our own coast it occurs only at the southern extremity of East Florida, where it was found by Mr. Peale.

The figure is from a beautiful, though small specimen, in the collection of Mr. Thomas Rogers.

LIMA.

GENERIC CHARACTER.

Shell nearly equivalved, more or less oblique, sub-auriculated, gaping a little on one side; beaks separated, and their inner surface everted. Hinge with a fosset, partly external, receiving the cartilage.

OBSERVATIONS.

This genus belongs to the family *Pectenidæ*, and is most nearly allied to *Pecten*, from which, however, the species are easily distinguished by the obliquity of the shells and their separated beaks, and they are altogether destitute of the varied and brilliant colours of the *Pectens*. They have an inconsiderable byssus, and the habits of the animal are much the same as in the preceding genus. They are even more active in swimming, their valves moving with greater rapidity. The recent species are few, only six having been described by Lamarck, who also describes five fossil species, but De France enumerates eleven. None has yet been found in a fossil state in this country: there occurs, however, a species of *Plagiostoma* in the *Green Sand* of New Jersey, which may readily, without close examination, be mistaken for a *Lima*.

In Europe, this genus occurs in the *Calcaire grossiera*, and fossils of the *lias* have been referred to it, the generic relations of which are, at least, doubtful.

LIMA GLACIALIS.

TAB. III. *fig. 1.*

SPECIFIC CHARACTER.

Shell oval, subequilateral, with numerous subscabrous striæ; margin entire.

SYNONYMA.

LIMA GLACIALIS. *Lam. An. sans Vert. vol. 6, part 1, p. 157.*

OSTREA GLACIALIS. *Gmelin.*

OSTREA SCABRA. *Dillwyn's Recent Shells, p. 271.*

LIMA. *Enc. Method, pl. 206, fig. 2 and 3.*

Lister, tab. 176, fig. 13.

Cabinet of the Acad. Nat. Sciences, No. 1158.

OBSERVATIONS.

A common and well known species, which is frequently brought from the West Indies and sold in the fruit stores in this city. It inhabits the coast of East Florida, and the keys and islands of the Gulf of Mexico. Variety B, of Lamarck, is distinguished by its minute and smooth striæ.

The figure represents a fine and highly coloured specimen in the collection of Mr. Mason; it is from a small island in the gulf of Mexico.

L.L.M.I



L. L. M. I.



L. L. M. II.

LIMA SQUAMOSA.

TAB. III. *fig. 2.*

SPECIFIC CHARACTER.

Shell ovate, with strong scaly ribs; hinge oblique; margin plicated; colour white or yellowish.

SYNONYMA.

LIMA SQUAMOSA. *Lam. An. sans Vert. vol. 6, part 1, p. 157.*

OSTREA LIMA. *Lin. Gmelin.*

LIMA. *Enc. Method. t. 206, fig. 4.*

Cabinet of the Acad. Nat. Sciences, No. 1159.

OBSERVATIONS.

This shell, when perfect, is furnished with elevated scales, which are generally wanting in those specimens exposed for sale in the fruit stores; it inhabits the same localities as the preceding species, from which it differs widely in outline, one side being truncated or depressed; it is also much thicker, and the ribs are broad and elevated.

The localities given by Dillwyn, from various authorities, are the Archipelago, Mediterranean, Red Sea, Bay of Naples, and the coasts of Ceylon and Tranquebar.

SOLECURTUS.

GENERIC CHARACTER.

Shell equivalved, oval elongated, gaping at the extremities, which are obtusely rounded; hinge and basal margins nearly parallel; apex distant from the extremity and not prominent; muscular impressions two, remote and distinct; teeth variable, generally imperfect.

OBSERVATIONS.

This genus, which connects *Solen* with *Sanguinolaria*, was instituted by Blainville to receive a group of shells, which have characters quite distinct from the *Solens* although they are closely allied to them: the rounded muscular impressions, and the sinuous impression of the mantle, indicate an anatomical difference in the animal, sufficient to warrant the construction of a genus for their reception. The hinge is never terminal like that of the *Solens*, with which genus perhaps the *Solecurtus legumen* of Blainville will form the connecting link. Blainville divides this genus into three parts, viz.

A. Compressed, thin, with an internal rib obliquely decurrent from the apex to the basal margin; *Solen radiatus*, Lin. (Genus *Siliqua*, Megerle; *Leguminaria* and *Siliquaria*, Schum.)

B. More cylindrical and destitute of the internal rib, *Solen strigillatus*, Lin.

C. More elongated and subulate, *S. legumen*, Lin.

The shells of this genus inhabit, like the *Solens*, the sand of the sea shores, in deep and vertical pits, and in such places as are bare at low tide; their residences are generally detected only by a small dimple in the sand; occasionally, however, they may be seen with a part of their shells projecting above the surface, and then they may easily be taken by intercepting their retreat with a spade.

SOLECURTUS FRAGILIS.

TAB. IV, *fig.* 1.

SPECIFIC CHARACTER.

Shell oblong oval, slightly contracted in the middle, one end abruptly rounded, the other less obtuse; beaks central, from whence an obscure internal rib descends towards the basal margin, which is slightly arcuated.

SYNONYMA.

SOLEN FRAGILIS. *Pulteney, Dorset. Cat.* p. 28, t. 4, *fig.* 5. *Dillwyn's Recent Shells*, p. 65.

SOLEN ANTIQUATUS. *Montagu, Test.* p. 52.

Maton and Racket, Lin. Trans. vol. 8, p. 46.

SOLEN CENTRALIS. *Say, Journ. Acad. Nat. Sciences*, vol. 2, p. 316.

PSAMMOBIA TÆNIATA. *Turton, Conchilia Insularum Britannicum*, p. 85, t. 8, *fig.* 3.

Cabinet of the Acad. Nat. Sciences, No. 820.

OBSERVATIONS.

This shell is represented in Turton's figure with the basal margin straight, as we find it in youth and middle age, and it is only when old that it becomes arcuated: it is thin, translucent, bluish white, and covered with an olivaceous epidermis; a reddish brown stripe passes from the apex towards the opposite margin, and marks the course of the internal rib; from this character Turton has given it the specific name of *tæniata*, as its original appellation is pre-occupied in the genus *Psammobia*, to which he has referred it. It has a single tooth in one valve, and two very dissimilar teeth in the other, the largest being curved and flattened at the top.

Maton and Racket have adopted the opinion of Montagu, that this shell is the *S. antiquatus* in its incomplete state, but the specimen here figured has every appearance of maturity, and certainly bears no resemblance to *S. antiquatus*, as figured in Pennant's British Zoology, nor has that species been discovered upon our coast.

I am indebted to Mr. D. B. Smith for the use of a very perfect shell of this species, found on the coast of Rhode Island by Lieut. Brown. Col. Totten, of Newport, has since politely sent for my inspection the largest and most beautiful specimens I have seen; in one of these the epidermis is obscurely radiated, beneath which the shell is pale violaceous. They are from the vicinity of Newport, where, as Col.

SOLECURTUS



S. fragilis.



S. costatus



S. Caribensis.

Totten informs me, the species is very rare. It is also scarce upon the southern shores, where it was first observed by Mr. Say. It inhabits the coast of Great Britain and is probably one of the rarest bivalves of that Island.

SOLECURTUS COSTATUS.

TAB. IV, *fig.* 2.

SPECIFIC CHARACTER.

Shell oval elongated, much compressed, very thin and fragile, with an internal rib descending nearly perpendicular from the beak, expanding and becoming obsolete near the basal margin.

SYNONYMA.

SOLECURTUS COSTATUS. *Say, American Conch. pl.*
18.

SOLEN COSTATUS. *Say, Journ. Acad. Nat. Sciences, vol. 2, p. 315.*

Cabinet of the Acad. Nat. Sciences, No. 1214.

OBSERVATIONS.

The colour is violaceous, with two or three pale rays; the epidermis is polished and olive yellow on the inferior half of the shell, and a flesh coloured

stripe marks the course of the rib which crosses the valves internally, and appears to be designed to strengthen the shell for the support of the anterior muscles.

Inhabits Great Egg Harbour, and Squam, on the coast of New Jersey, at which latter locality my father obtained very perfect specimens, though without the animals. It occurs also on the coast of Rhode Island, but the largest I have seen is from Maine, and was presented to the Academy of Natural Sciences by Col. Abert; it is about one third larger than the figure.

SOLECURTUS CARIBŒUS.

TAB. IV, *fig.* 3.

SPECIFIC CHARACTER.

Shell oblong oval, straight, very obtusely rounded at each end; two teeth in one valve, and a bifid tooth in the other.

SYNONYMA.

SOLECURTUS CARIBŒUS, *Blain. Dict. des Sciences Naturelle, vol. 29, p. 240.*

SOLEN CARIBŒUS, *Lam. An. sans Vert. v. 5, p. 454.*

CHAMA ANGUSTIOR. *Lister, t. 421, fig. 1.*

SOLEN. *Enc. Method. t. 225, fig. 1.*

Cabinet of the Acad. Nat. Sciences, No. 823.

OBSERVATIONS.

When taken alive, in favourable situations, this shell exhibits a beautiful straw-coloured epidermis, wrinkled at each end, where it is dark greenish brown, and crossed by irregular hair-like lines; a few parrallel green lines cross the centre of the valves, and appear like scratches in the shell when divested of its epidermis.

I have figured and described this species as we find it upon the New Jersey coast, and it will be seen by a reference to the figure in the *Encyclopedie Methodique*, that it differs considerably in outline from the shell described by Lamarck as inhabiting the ocean of the Antilles: in the latter the beaks are central, whilst in the northern variety they are considerably behind the centre, and the shell is larger and higher in proportion to the length; these differences might lead us to regard it as a distinct species, did we not observe intermediate varieties from East Florida, which leave no room to doubt their specific identity.

My friend Dr. S. G. Morton has sent me the following interesting notice of this species:

“It is found in great numbers at Great Egg Harbour on the coast of New Jersey. The most beautiful specimens inhabit the *Rainbow bar*, a sandy shoal exposed at low tide. There is not, in common, any perforation of the sand to indicate the presence of this species, and, in order to detect it, the surface must be removed to the depth of three or four inches. These excavations, if carefully made, expose a

vertical cylindrical cavity, about an inch and a half in diameter, and a foot or more in depth. The moment the animal is surprised, it descends rapidly to the bottom of its cell, protruding and expanding the inferior part of its body into a button-like extremity, which renders it difficult to withdraw the shell until the sand is excavated entirely around it.

“This species is also abundant on the main land at Great Egg Harbour, about half a mile south of the Point-house; but the coast is here muddy, and the shells more or less decorticated, while those on the bar already mentioned have a beautiful, unbroken, straw-coloured epidermis.

“The *Solen ensis* and *Mya arenaria* are met with it the same beds.”

Mr. I. Lea informs me that this species is abundant at Cape May, on the same coast; and he mentions as a remarkable circumstance, that in one instance when the retreat of the animal had been suddenly cut off, it darted a foot or more above the surface of the sand.

North of New Jersey this shell is very rare; but it is common at the mouths of rivers on every other part of our coast.

SOLEN.

GENERIC CHARACTER.

Shell equivalve, extremely inequilateral, much elongated, gaping at both ends; beaks not prominent; ligament external. Muscular impressions two, remote, the anterior one much elongated.

OBSERVATIONS.

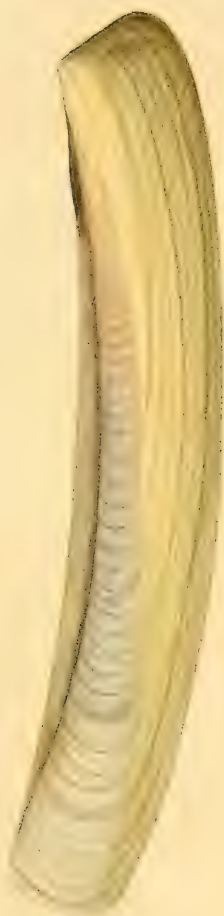
The species of this genus, commonly known by the name of *razor shells*, are distinguished by their long and narrow shape, and the beaks being nearly or quite terminal, and not elevated above the dorsal line. They reside in the sand of the sea shores, forming vertical and cylindrical pits, which are often nearly two feet deep, and are just wide enough to enable the animals to traverse them with facility. They are situated in shoals or sand bars, and the flat shores of bays and rivers, where the flood tide may cover them, at which period, the shells may be seen in the water with the extremity elevated above the orifice of their cells. In the Mediterranean, they are taken, when exposed in this manner, by persons who swim above them, and suddenly sieze them with their hands. The animal there, in common with that of many other bivalves, is an article of diet. Pennant observes, that in England several kinds are taken by means of a barbed spear suddenly thrust into their shells, and are brought up to the table fried in eggs. The *Solens* are also taken in the same manner on the coast of France: and it is probable, from their general

estimation in various parts of Europe, that they constitute an agreeable and wholesome food ; but I never knew an instance of their being so used in this country, although we have the common European species, (*S. ensis*) in great abundance on every part of our coast. The residences of these shells are sometimes detected, like that of *Mya arenaria*, by a small jet of water. In France, the fishermen are accustomed to take them by throwing a little salt into these cavities, which irritating the extremity of the tubes or syphons of the animals, causes them to ascend immediately to the surface, in order, it is supposed, to free their sensitive organs from the substance which annoys them. The moment the shell appears at the surface, it is pierced with an iron point called *dardillon* ; but it requires some address to take it, for if the instrument should miss its hold, the animal will sink with surprising rapidity ; nor will the same means induce it to reascend, as it prefers to suffer the irritation of the salt to the certainty of being captured.

The species of this genus, though few in number, are distributed on almost every shore, where the sloping sands can afford them a secure habitation. Only two species occur on the whole Atlantic coast of North America: one of these is peculiar to this country.

The habits of the *Solens* were known to Aristotle, who supposed that the sense of hearing was possessed by the animals, because, he observes, when a loud noise is suddenly made above the water where they reside, they instantly sink into the sand.

SOLEN



L. S. ensis



2 S. viridis



SOLENSIS.

TAB. V, *fig.* 1.

SPECIFIC CHARACTER.

Shell linear, slightly curved; hinge with a double tooth in each valve.

SYNONYMA.

SOLENSIS. *Lin. Lam. An. sans Vert. vol. 5, p. 452.*

SOLENS CURVUS. *Lister, Conch. t. 411, fig. 257.*

SOLENS. *Enc. Method. t. 223, fig. 1, 2, 3.*

Cabinet of the Acad. Nat. Sciences, No. 816.

OBSERVATIONS.

A very common shell, inhabiting almost every part of our coast, and it is equally abundant on the European shores. There is a variety distinguished by its smaller size, and in being narrower in proportion to its length than the common specimens: this variety inhabits the southern coast.

At Great Egg Harbour and Cape May, this species may readily be taken alive on the sand bars, in company with *S. viridis* and *Solecurtus caribæus*. It will occasionally spring out of the sand when alarmed.

This shell is a fossil of the Upper Marine formation in England; and I have detected it in the equivalent beds in Maryland.

SOLENI VIRIDIS.

TAB. V, fig. 2.

SPECIFIC CHARACTER.

Shell elongated, straight; anterior end obliquely truncated and slightly reflected; posterior side narrowed towards the end, which is rounded; dorsal margin nearly rectilinear; hinge terminal, with one tooth in each valve.

SYNONYME.

SOLENI VIRIDIS. *Say, Journ. Acad. Nat. Sciences, vol. 2, p. 316.*

Cabinet of the Acad. Nat. Sciences, No. 1561.

OBSERVATIONS.

This shell is fragile, and when young the epidermis is pale green, and highly polished, becoming olivaceous with age, when it exhibits faint transverse markings, in the manner of *S. ensis*. The anterior extremity is somewhat reflected, and a slightly impressed line crosses the valves, beginning at the extremity of the hinge margin; between this line and the anterior tip, the epidermis is darker coloured.

Common on the southern coast. *Say*. I have received it large and very perfect from Rhode Island, through the kindness of Col. Totten. Dr. Morton obtained a large specimen at Great Egg Harbour.

NUCULA.

GENERIC CHARACTER.

Shell equivalve, with contiguous beaks; hinge with an anterior and posterior series of numerous teeth, interrupted at the summit by a triangular cartilage fosset; ligament interior; muscular impressions two, simple.

OBSERVATIONS.

Although Lamarck includes this genus in his family *Arcacea*, in a more natural arrangement it would probably be referred to *Mactracea* of the same author. Turton first observed its affinity to *Mactra*; and certainly the cartilage fosset which is so remarkable in this genus, is wanting in *Arca* and *Pectunculus*.

Sowerby, in his *Genera of Shells*, indicates three divisions of this genus: 1st, of shells whose general form is lanceolate, and have no epidermis; 2nd, of shells which are rostrated, and have a strong epidermis. These constitute the genus *Lembulus* of Leach, and Sowerby supposes that some of them at least may be fresh water shells; the *N. limatula*, however, one of the largest and most beautiful of the *Nuculæ*, belongs to this division, and is decidedly marine. The 3rd division consists of small obtusely ovate shells, one of which, the *Arca nucleus* of Linneus, is the type of the genus, and although there is a striking dissimilarity in outline between these and the shells of the two former divisions, the generic character is essentially the same.

NUCULA LIMATULA.

TAB. VI, *fig. 1.*

SPECIFIC CHARACTER.

Shell ovate elongated, with central beaks; anterior side rostrated, and pellucid at the end; epidermis olivaceous and polished.

SYNONYME.

NUCULA LIMATULA. *Say, American Conch. pl. 12.*

Cabinet of the Acad. Nat. Sciences, No. 1455.

OBSERVATIONS.

This beautiful species occurs more than two inches in length; and is covered with a strong green olive epidermis, with a faint ray on either side running in an obsolete furrow.

Perhaps no shell, known to inhabit our coast, has been more rarely observed, until the winter of 1831, when a violent snow storm in February cast them in abundance alive on the beach near Newport, Rhode Island. Col. Totten has presented me specimens of different periods of growth, and these have enabled me to identify this species with a shell which I have found very common in a fossil state near Suffolk, and in the banks of James and York rivers, in Virginia. Perhaps the *N. lævis* of Say may prove to be this shell, but it differs in form from my fossil specimens.

NUCULA PROXIMA.

TAB. VI, *fig. 2.*

SPECIFIC CHARACTER.

Shell subtriangular, oblique, with numerous hardly perceptible radiating striæ; anterior side short, and very obtusely rounded; posterior series of teeth distinct; margin strongly crenate.

SYNONYME.

NUCULA PROXIMA. *Say, Journ. Acad. Nat. Sciences, vol. 2, p. 270.*

Cabinet of the Acad. Nat. Sciences, No. 1454.

OBSERVATIONS.

Inhabits the southern coast. *Say*. It is common on the coast of Rhode Island, and I found it fossil in the same localities as the preceding species. Except in its smaller size and rounded anterior margin, it appears not to differ from *N. nucleus*, and is probably identical with *N. obliqua* of *Say*, described as a fossil in *Silliman's Journal, vol. II. p. 40.*

NUCULA ACUTA.

TAB. VI, *fig.* 3.

SPECIFIC CHARACTER.

Shell ovate elongated, convex, with numerous regular concentric striæ; anterior side slightly recurved and very acute at the extremity, and with the dorsal margin sunk so as to form a lanceolate depression; beaks behind the centre; fosset very small and hardly oblique.

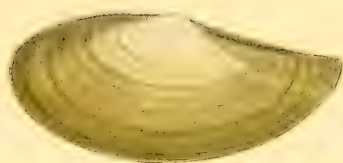
Cabinet of the Acad. Nat. Sciences, No. 1738.

OBSERVATIONS.

I first obtained this shell in a fossil deposit of so recent a character, that the species, with one or two exceptions, are such as occur very commonly upon the coast of the middle and southern States; and although I have never seen a recent specimen of the shell in question, I believe it still exists upon our coast, and that it has been overlooked on account of its small size. I have since found great numbers, associated with the two preceding species, in the tertiary beds of Virginia.

It very closely resembles *N. minuta*, but is more acute at the anterior extremity.

NUCULA

1 *N. limatula*2 *N. proxima*3 *N. acuta*



SANGUINOLARIA.

GENERIC CHARACTER.

Shell oval or oblong oval, somewhat compressed, and gaping a little at each end; beaks rather prominent; superior margin arcuated, not parallel to the inferior; two approximate hinge teeth in each valve; muscular impressions two, simple; pallial impression profoundly sinuous; ligament external, short and convex.

OBSERVATIONS.

A genus very closely related to *Solecurtus*, but having in form more resemblance to *Tellina*. Care is requisite in studying the shells of this family, as the teeth are generally broken, and the number of these distinguish the present genus from *Psammobia* and *Psammotea* of Lamarck. I have recently examined very perfect specimens of the two species referred to *Psammobia* by Say, which, as they have two teeth in each valve, cannot with propriety be included in that genus.

These shells have a very slight, deciduous epidermis, destitute of the lively colour and polish, which are so ornamental in *Solen* and *Solecurtus*, and from which they may be distinguished by a slight elevation of the beaks in addition to their general form.

The species are not very numerous, and, like the shells of kindred genera, burrow to a considerable depth in the sand.

SANGUINOLARIA FUSCA.

TAB. VII, *fig.* 1.

SPECIFIC CHARACTER.

Shell compressed, subovate, generally thin, concentric lines rather prominent; anterior side obtusely rounded, and nearly closed; posterior side narrowed and gaping a little, with a slight submarginal wave; beaks central; teeth, two in each valve, one of which is bifid.

SYNONYME.

PSAMMOBIA FUSCA, *Say, Journ. Acad. Nat. Sciences, vol. 5, p. 219.*

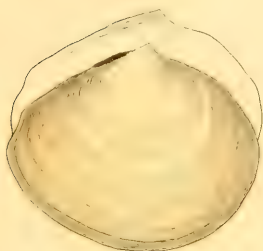
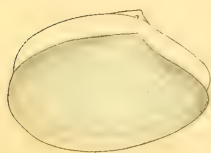
Cabinet of the Acad. Nat. Sciences, No. 886.

OBSERVATIONS.

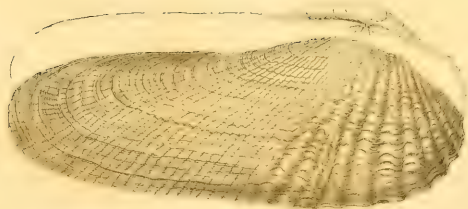
This shell is white or reddish and covered with a pale yellowish or fuscous epidermis.

Inhabits the estuaries of Georgia. *Say.* It is not uncommon on the coasts of New Jersey, New York and Rhode Island, burrowing in the sand. I have observed it in the Potomac river where the water is brackish.

SANGUINOLARIA.

*S. fusca**S. lusoria.*

PETRICOLA.

*P. pholadiformis*

SANGUINOLARIA LUSORIA.

TAB. VII, *fig.* 2.

SPECIFIC CHARACTER.

Shell oblong, suboval, bluish-white, posterior side narrowed and inclining to the right at the end; teeth two in each valve.

SYNONYME.

PSAMMOBIA LUSORIA, *Say, Journ. Acad. Nat. Sciences, vol. 5, p. 316.*

Cabinet of the Acad. Nat. Sciences, No. 1402.

OBSERVATIONS.

This shell is covered with a pale and very delicate epidermis, and is distinctly gaping at each end.

Mr. Say first discovered it on the southern coast, and referred it with a mark of doubt to *Psammobia*. I obtained a few valves near Cape Henry, on the coast of Virginia, and in the collection of the Academy is a very perfect specimen, found by Dr. S. G. Morton at Great Egg Harbour. In a fossil state, it occurs in Virginia, but is not common.

PETRICOLA.

GENERIC CHARACTER.

Shell oblong or subtrigonal, inequilateral, posterior side narrowed and gaping; hinge with two or three teeth in one valve, and one or two in the opposite.

OBSERVATIONS.

Lamarck includes this genus in his family *Lithophaga*, on account of the species forming their habitations in rocks and stones. Some naturalists have supposed these perforations to be effected by a mechanical action of the valves, while others agree that they are formed by the secretion of a peculiar acid, acting as a solvent upon the calcareous rocks into which the animals bore. The only species known to inhabit our coast forms a singular exception to the general habits of this family, as it burrows exclusively in hard ground, among the roots of plants.

Venerupis differs from the present genus merely in having the cardinal teeth minute, and in the species being of a suborbicular form. Blainville considers these characters too unimportant to warrant the separation of shells so nearly allied; accordingly in his *Malacologie* we find them constituting one genus, to which he has retained the name of *Venerupis*.

PETRICOLA PHOLADIFORMIS.

TAB. VII, *fig.* 3.

SPECIFIC CHARACTER.

Shell elongated, anterior side short, with strong ribs crossed by waved striæ; posterior side with radiating lines, and gaping; teeth three in one valve, and two in the other.

SYNONYME.

PETRICOLA PHOLADIFORMIS, *Lam. An. sans vert.*

vol. 5, *p.* 565.

Sowerby's Genera, No. XV, pl. 1, fig. 1.

PETRICOLA FORNICATA, *Say, Journ. Acad. Nat.*

Sciences, vol. 2, p. 319.

Cabinet of the Acad. Nat. Sciences, No. 860.

OBSERVATIONS.

This shell is irregular in form, and marked with strong indented lines within on the anterior side. The hinge teeth, when perfect, are invariably three in one valve, the middle tooth being the largest and bifid; on the opposite valve are two bifid teeth.

A very common species on all parts of the coast, at least as far north as Maine. Mr. W. R. Clapp informs me that it is gregarious on the shore of Long Island Sound, in company with *Pholas truncata*.

CARDITA.

GENERIC CHARACTER.

Shell subovate or suborbicular, with strong radiating ribs; teeth in one valve two, generally oblique, one of them elongated, thick, mostly rather curved, the other sometimes straight, short, and thick; in the other valve, one elongated, thick, and oblique tooth, and a deep elongated cavity for receiving the larger tooth of the other valve; margin crenulated; pallear impression entire.

OBSERVATIONS.

A genus formed by Bruguiere to receive part of the Linnean *Veneres*, from which Lamarck has separated the species of a suborbicular form, under the name of *Venericardia*; in these the oblique position of the anterior tooth alone distinguishes the hinge from that of the *Carditæ* of Lamarck; I have therefore adopted the present genus as defined by Blainville and Sowerby, who include the *Venericardiæ*; and thus it remains as originally constructed by Bruguiere.

Both the recent and fossil species are numerous; and several of the latter occur in the tertiary of the southern states.

CARDITA.

*C. borealis**C. merassata.*

CARDITA BOREALIS.

TAB. VIII, *fig.* 1.

SPECIFIC CHARACTER.

Shell suborbicular, thick, with about eighteen narrow ribs, and the interstices concave and transversely wrinkled; epidermis brown black; margin not profoundly crenulated.

Cabinet of the Acad. Nat. Sciences, No. 971.

OBSERVATIONS.

A rare shell, and if *Venericardia* should be still acknowledged as a genus, it must be called *V. borealis*. Lamarck describes but one recent species.

The only specimen I have seen is in the collection of the Academy, and was found on the coast of Massachusetts by Dr. C. Pickering.

CARDITA INCRASSATA.

TAB. VIII, *fig.* 2.

SPECIFIC CHARACTER.

Shell oblong; ribs about 18, elevated, crenulated anteriorly, and marked with fulvous or brown spots.

SYNONYME.

CARDITA INCRASSATUS, Sow. in *Tunkerville Catalogue*, No. 400.

CARDITA, *Enc. Method. Pl.* 233, fig. 3.

Cabinet of the Acad. Nat. Sciences, No. 1413.

OBSERVATIONS.

A species allied to *Chama antiquata*, Lin, (*Cardita sulcata*, Brug. et Lam.) with which it had long been confounded before G. B. Sowerby described it as distinct. The figures in the *Encyclopedie Methodique*, referred to as representing this species, are quoted by Lamarck as doubtful or incorrect figures of *Cardita sulcata*; they are, however excellent representations of the elongated variety of the shell here figured and described as the *C. incrassata*.

Not an uncommon shell from the East Indies; it introduced as inhabiting our coast on the authority of a single specimen in Mr. Hyde's cabinet, from the Florida coast.

MYA.

GENERIC CHARACTER.

Shell elongated, nearly equivalve, gaping at both ends, but in a greater degree at the posterior end; hinge with a single large, compressed, dilated tooth, projecting vertically in one valve; the other valve without any teeth; muscular impressions two, lateral, distant; anterior one rather narrow; posterior one nearly orbicular; pallial impression with a large sinus.

OBSERVATIONS.

This genus is allied to *Anatina*, Lam., *Lutraria*, Lam. and *Sphenia*, of Turton, which last has been united with *Mya* by G. B. Sowerby. The recent species are few in number, and as Mr. Sowerby observes, "all belonging as far as we know to the northern hemisphere." One species only inhabits the coast of the United States, the *M. arenaria*, Lin., which also occurs among the fossils of the Newer Pliocene, in Maryland, but no other species has hitherto been observed in the United States. Lamarck describes only four recent species. Deshayes enumerates five in the Tertiary beds.

MYA ARENARIA.

TAB. IX, *fig.* 1.

SPECIFIC CHARACTER.

Shell ovate ; beaks nearly central ; hinge with a broad very prominent tooth, from which a small one projects laterally ; epidermis pale brown, with hair like lines and obsoletely radiated.

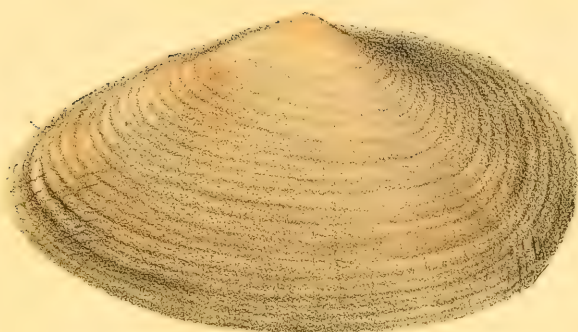
SYNONYMES.

MYA ARENARIA, *Lin.*, M. ACUTA, M. MERCENARIA, *Say, Journ. Acad. Nat. Sciences, vol. 2, p. 313.*

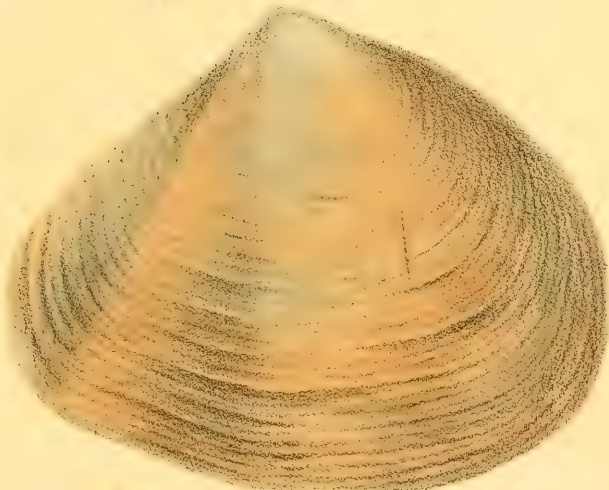
OBSERVATIONS.

Inhabits the whole Atlantic coast of the United States, and is sold in the markets of New York and Philadelphia. It is esteemed by many admirers of shell fish more than the common clam, or *Venus mercenaria*.

This is a very common shell on the shores of France, Great Britain and Norway ; on the New Jersey coast, it burrows very deep in the sand near the mouths of rivers and on the shores of the lagoons, where it is deserted by the receding tide. It keeps



1.



2.

up a communication with the surface by means of its retractile tube, which is greatly elongated when produced to its utmost length. The inexperienced traveller of the sands inhabited by this shell is surprised to feel a jet of water sometimes ejected upon his legs, which is caused by the animal, when the sense of danger induces it suddenly to contract its tube. It is known in the southern states by the name of *Maninose*. It is occasionally found much larger than the specimen figured.

THRACIA.

GENERIC CHARACTER.

Shell thin, inequivalved, ventricose, gaping posteriorly; hinge with a thick callus in each valve; ligament exterior, situated in a linear groove in the callus; muscular impressions two, the anterior one elongated; pallear impression with a deep sinus.

OBSERVATIONS.

This genus was separated from *Anatina* by Dr. Leach, and adopted by Blainville. I should suppose from the *habit* of the shell, that it was more nearly related to *Mya* than to any other genus, but unlike *Mya* it inhabits the ocean exclusively, and the animal appears to be unknown.

THRACIA DECLIVIS.

TAB. IX, *fig.* 2.

SPECIFIC CHARACTER.

Shell short subovate, anterior margin obtusely rounded ; posterior side sinuous ; the superior margin nearly rectilinear, with a submarginal carinated line ; extremity truncated ; surface with coarse concentric lines ; beaks subcentral, slightly prominent, very thin at the apex.

SYNONYMES.

MYA DECLIVIS, *Pennant, British Zoology, vol. 4, p. 79.*

LIGULA PUBESCENS, *Montagu, Test. p. 40.*

MYA CONVEXA, *Wood, Conch. p. 92, t. 18, fig. 1.*

ANATINA MYALIS, *Lam. An. sans. vert. vol. 5, p. 464.*

THRACIA CORBULOIDES? *Blain. Mal. p. 565, pl. 76, fig. 7.*

OBSERVATIONS.

This species has hitherto been found only on the coast of the eastern states, on this side of the Atlantic ; it inhabits the shores of Great Britain and the He-

brides ; Lamarck observes, that in its exterior aspect it much resembles *Mya arenaria*.

Lamarck has quoted the *Mya declivis*, Pen., as a synonyme of his *Anatina myalis*, which Blainville considers the type of Schumacher's genus *Periploma* ; it is very different from that genus as figured and described by Schumacher.

Deshayes, in his Tertiary tables, gives two recent and four fossil species of *Thracia*.

LUTRARIA.

Shell equivalve, inequilateral, oblong or subovate, gaping at the extremities ; hinge with two diverging teeth, united above, and a large deltoid cavity situated obliquely beneath them ; lateral teeth none ; ligament internal ; muscular impressions two ; pallial impression with a profound sinus.

OBSERVATIONS.

This genus was separated by Lamarck from the Linnean *Mactræ* and included in his family MAC-TRACEES. Cuvier has grouped it with *Mya* in his family INCLUSA. Lamarck describes eleven recent species, and Deshayes enumerates six in the Tertiary beds : two species occur in the Eocene of South Carolina and Alabama, the *L. papyria* and *petrosa*, nobis.

LUTRARIA CANALICULATA.

TAB. X, *fig.* 1.

SPECIFIC CHARACTER.

Shell ovato-orbicular, inflated, thin and fragile ; valves regularly and concentrically grooved, with fine parallel lines within the grooves ; posterior side short, subcuneiform, compressed, with numerous wrinkled lines ; epidermis yellowish brown, extremely thin and deciduous ; within grooved as without.

SYNONYMES.

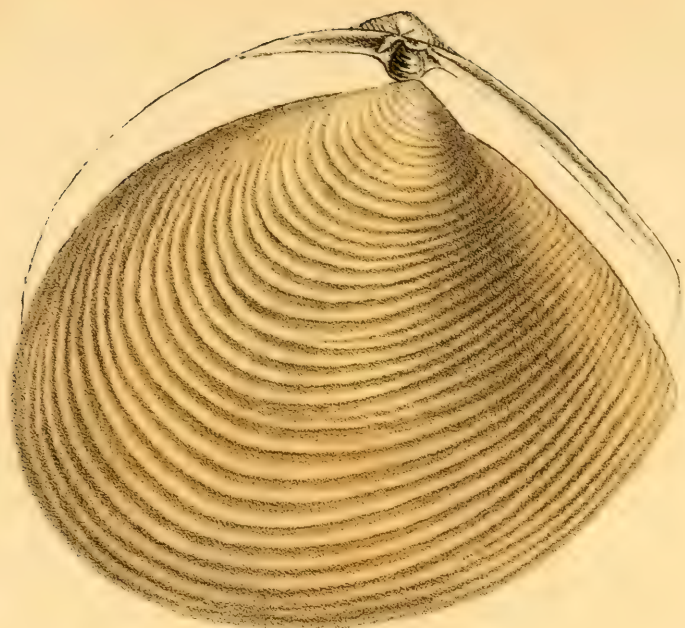
LUTRARIA CANALICULATA, *Say, Journ. Acad. Nat. Sciences, vol. 2, p. 311, Lister, t. 308, fig. 141.*

LUTRARIA CAMPECHENSIS, *Wood, Index, Test. (Supplement,) pl. 1, fig.*

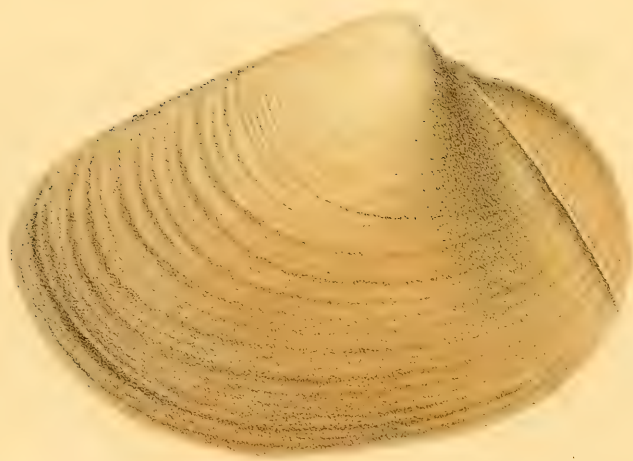
OBSERVATIONS.

The figure quoted from Lister, Dillwyn says, "is No. 66 of Schroeter's *Einleitung* ; and if more than a variety, is nearly allied to *Mactra plicataria*." Mr. Say observes that it approaches the *L. crassiplica* of Lamarck.

Inhabits from Virginia to Florida inclusive, in abundance ; further north it is rarely seen, and I know not whether it has been found north of Cape May. I procured it in the Gulf of Mexico, near Mobile Point. Lister's specimen was from the bay of Campeachy. Professor Elisha Mitchell found it fossil in the Pliocene of North Carolina.



1.



2.

LUTRARIA LINEATA.

TAB. X, *fig.* 2.

SPECIFIC CHARACTER.

Shell suboval, thin, compressed; hinge slope rectilinear; posterior side with a reflected margin, and carinated submarginal line; within slightly undulated; posterior margin glabrous, with an obtusely indented line, corresponding to the exterior carinated one.

SYNONYMES.

LUTRARIA LINEATA, *Say, Journ. Acad. Natural Sciences, vol. 4, p. 310; American Conchology, pl. 9.*

LUTRARIA RECURVA, *Wood, Index Test. (supplement,) pl. 1, fig. 2.*

OBSERVATIONS.

Mr. Say believes this species to be nearly allied to, if not identical with, *L. papyracea*, Lam. He also observes that it inhabits the coasts of Georgia and Florida. It has since been found on those of North and South Carolina.

PANDORA.

GENERIC CHARACTER.

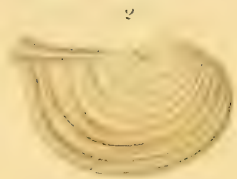
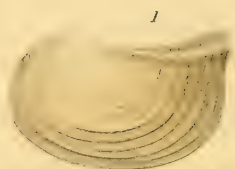
Shell oblong, inequilateral, inequivalve; hinge with two or three elongated teeth, with a fosset for the cartilage in each valve; right valve flattened; left valve convex; hinge margin inflected; muscular impressions two; pallial impression with a sinus?

OBSERVATIONS.

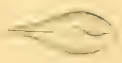
Mr. Say remarks: "The hinge teeth extend on the inner surface of the shell in some degree like those of *Placuna*, to which the genus seems to be allied, both by the position of the teeth, and the perlaceous consistence of the shell; but it is eminently distinguished by having two muscular impressions." The genus was constructed by Lamarck, and arranged after *Corbula* in his family CORBULEES. Cuvier refers it to his family INCLUSA, as a subgenus of *Mya*, and places it next to *Panopea*. Mr. Say informs us that Poli has referred the animal of *Pandora* to the same genus with that of *Solen*, under the name of *Hypogea*.

Few recent species of *Pandora* are known. In the Tertiary of Europe, Deshayes enumerates three; two occur in the Pliocene of Virginia.

P. trilineata.



LYONSIA.



2 *L. hyalina.*

LEPTON.



3 *L. rubicincta.*

PANDORA TRILINEATA.

TAB. XI, *fig.* 1.

. SPECIFIC CHARACTER.

Shell perlaceous, concentrically wrinkled; anterior side very short and obtusely rounded; posterior extremity rostrated; hinge margin concave, with two approximate submarginal slightly prominent lines; a slightly impressed line passes obliquely from beak to base on the anterior side of the larger valve; teeth three in each valve; the middle tooth of the larger valve a mere prominent acute line; the other teeth thick.

SYNONYME.

PANDORA TRILINEATA, *Say, Journ. Acad. Nat. Sciences, vol. 4, p. 261; American Conch. pl. 12.*

OBSERVATIONS.

Mr. Say was the first who found this shell on the coast of New Jersey, and subsequently on the southern coast. I procured several specimens in the Pliocene strata of Virginia. The figure represents an uncommonly large specimen in the cabinet of my friend Thomas Rogers.

LYONSIA.

GENERIC CHARACTER.

Shell inequivalve, inequilateral, open at the posterior end ; hinge with a tooth nearly parallel to the hinge margin, common to both valves, to which it is united merely by the ligament, which is wholly internal.

OBSERVATIONS.

The curious arrangement of the hinge in *Mya Norvegica* of Chemnitz, was first accurately observed by Dr. Turton, who constructed the present genus to receive this interesting shell. The author observes : “This genus is remarkable for the peculiar structure of the hinge, which consists of a single tooth, placed on the inside equally between the two valves, uniting them by a transverse ligament in each, which is seated in a narrow and rather oblique cavity on the anterior side. This tooth is not a fixed projection from either of the valves, nor formed from the substance of the shell itself, as in all other known shells furnished with teeth, but is an independent process, moveable with the ligament, and may be entirely detached from either or both the valves ; consequently, when the valves are opened, it is found sometimes in the right valve and sometimes in the left, as the liga-

ment may casually loosen, exhibiting the form of a somewhat elevated transverse tooth."

Very few recent species are known, and none has hitherto been found in a fossil state. A fine species was found at Guayaquil by Dr. M. Burrough, to which I have given the name of *L. inflata*.

LYONSIA HYALINA.

SPECIFIC CHARACTER.

TAB. XI, *fig. 2.*

Shell oblongo-ovate, extremely thin and fragile, pellucid; anterior side short, margin rounded; posterior side produced, slightly reflected, and truncated at the extremity; epidermis pale, with radiating rugose striæ, obsolete upon the umbones, but distinct towards the base and posterior end, where the epidermis is wrinkled; beaks prominent.

SYNONYME.

MYA HYALINA, *nobis*, *Journ. Acad. Nat. Sciences*,
vol. 6, p. 261, pl. 11, fig. 12.

OBSERVATIONS.

This small species has been found abundantly in Long Island sound, and on the coast of Rhode Island.

It has been confounded by some writers with *L. Norwegica*, but is very distinct, if the figures hitherto given of that species are correct.

LEPTON.

GENERIC CHARACTER.

Shell suboval or suborbicular, equivalve, inequilateral; hinge with two linear teeth in each valve, divaricating from the beaks; one of the teeth angulated; muscular impressions two, suboval, lateral; ligament internal.

OBSERVATIONS.

This genus of small bivalves was constructed by Dr. Turton, and illustrated in his "*Conchilia Insularum Britannicarum*." Capt. Brown has since given it the name of *Tellimya*, and figures several new species of the British coast. One has been found on the coast of the United States, and another species occurs fossil in the Pliocene of Maryland.

LEPTON FABAGELLA.

TAB. XI, *fig.* 3.

SPECIFIC CHARACTER.

Shell suboval, convex, with minute crowded concentric lines; beaks central, rather prominent; epidermis yellowish, very thin, wrinkled; teeth similar in each valve; the posterior tooth longest, and angulated under the beak.

OBSERVATIONS.

This shell was found on the coast of Rhode Island, by Col. Joseph G. Totten, of Newport, who kindly sent it for my inspection. I think it may prove to be identical with one of the species figured by Capt. Brown, but as I have not his descriptions, I cannot be certain of it.

ARTEMIS.

GENERIC CHARACTER.

Shell lentiform, with regular concentric striæ; hinge with two sulcated teeth in the right valve; left valve with a compressed anterior tooth, and a groove

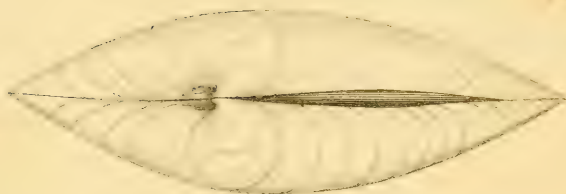
margined by an acute tooth on each side, to receive the large tooth of the opposite valve ; cartilage groove broad ; space under the apex generally excavated ; muscular impressions two, large ; palleal impression with a profound angular sinus.

OBSERVATIONS.

This natural group has been separated from *Cytherea* by authors, who have given it various names ; Schumacher terms it *Lentillaria* ; Megerle, *Orbiculus* ; and Blainville informs us that Poli has given it the name of *Artemis*, which I have adopted. The species are all known by their lentiform shape, and differ from each other but slightly in their general appearance. The cartilage is broad and situated in a long groove very like *Lucina*, and the fosset under the beak is another character which some species of these two genera possess in common ; but the deep sinus in the palleal impression indicates a difference in the organization of the animal, which will distinguish this genus from *Lucina*.

Two species inhabit the southern coast, the *A. acetabulum*, *nobis*, and *A. concentrica* ; both are also found in a fossil state ; the former abundantly in the Pliocene of Virginia, and Professor Mitchell obtained the latter in North Carolina, from a deposit containing a greater proportion of existing species than any of those in Virginia which I have visited.



*A. concentrica.*

ARTEMIS CONCENTRICA.

TAB. XII.

SPECIFIC CHARACTER.

Shell compressed, with fine regular impressed concentric striæ; beaks considerably curved, pointed; lunule cordate, slightly impressed; epidermis brownish yellow, tinged with ferruginous; hinge with a large oblong fosset under the beaks; muscular impressions very large.

SYNONYMES.

VENUS CONCENTRICA, *Gmel. Conch.* 7, t. 37, fig. 392.

CYTHEREA CONCENTRICA, *Lam. An. sans vert.* vol. 5, p. 573.

OBSERVATIONS.

Found abundantly from Virginia to Florida, and in the Gulf of Mexico. It is a beautiful shell, more compressed than any other species, a character which the student will find sufficient to distinguish it.

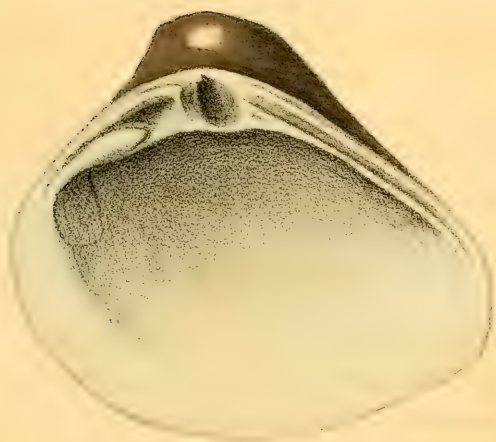
RANGIA.

GENERIC CHARACTER.

Shell equivalve, inequilateral ; subcordate ; hinge with an oblique fosset for the cartilage ; right valve with an elongated transversely striated groove to receive the posterior tooth of the opposite valve ; anterior side with two grooves for corresponding teeth, the smaller one margined by two compressed teeth : left valve with an elongated transversely striated tooth posteriorly, and two anterior ones, the largest being curved, elongated, and angulated posteriorly ; ligament short, internal, placed on the superior margin of the fosset ; cartilage divided, an equal portion remaining in each valve, with a concave surface ; muscular impressions two, suboval ; palléal impression, with a small sinus.

OBSERVATIONS.

This remarkable genus of the family MACTRADÆ, prefers, like *Cyrena*, brackish or even fresh water, and has an epidermis much resembling that of *Unio*. No more than one species has yet been discovered, which some have supposed to be the shell described by Lamarck, as *Cyrena truncata*, and appears to have been first recognized and described as a distinct genus by Mr. Gray, under the name of *Clathradon*,



whose unpublished manuscript I have seen. As I am ignorant whether Mr. Gray ever published his genus, I am compelled to adopt the name since given it by Des Moulins.

The hinge of this shell is similar to that of *MAC-TRA* ; and like that genus, each valve possesses a cartilage of its own, much resembling a small grain of maize ; and the ligament is strong, having to attach the valves without any assistance from the cartilage.

RANGIA CYRENOIDES.

SPECIFIC CHARACTER.

TAB. XIII.

Shell subtriangular, or subcordate, thick and ponderous, convex ; somewhat undulated ; beaks very prominent, distant, posterior side subcuneiform ; epidermis concentrically wrinkled ; lunule broad cordate, defined by an obtusely indented line.

OBSERVATIONS.

This shell has long been familiar to conchologists in this city, but its history and most interesting characters have not attracted the attention they merit. I have occasionally found worn valves on the sea beach, but

whether or no it inhabits the ocean, I am unable to decide. I once found it among the fossils, exclusively marine, of the Newer Pliocene in Maryland, but it was quite rare. The living shell, however, prefers the brackish waters of bays and lagoons, where it congregates in vast numbers. The extensive flats below Mobile, Alabama, are literally filled with them, where they burrow about three inches below the surface, and give token of their presence by a rather obscure depression in the sand. They are accompanied by only two other species of shells, the *Cyrena Carolinensis* and *Neritina reclinata*, of Say. Some idea of the former abundance of the *Rangia* may be obtained, when it is stated that the streets of Mobile are paved with them in a subfossilized state, and that the shore on which the city is built, and the marshy islands of the bay, have at various depths below the surface, a solid stratum of shells, the depth of which is unknown to me. They are said to be equally abundant on the borders of all the lagoons and bays which margin or indent the northern shore of the Gulf of Mexico.

MACTRA.

GENERIC CHARACTER.

Shell inequilateral, subtrigonal, slightly gaping at the posterior end; beaks prominent, with a compressed complicated cardinal tooth in each valve, and

a fosset for the cartilage situated obliquely beneath it; lateral teeth two, compressed, approximated to the fosset, double in the left valve; ligament partly exterior; pallical impression with a sinus, not very profound.

OBSERVATIONS.

This genus embraces a great number of recent as well as fossil species, and is related to *Amphidesma*, *Lutraria*, *Erycina*, *Rangia* and *Mesodesma*.

The species burrow a few inches deep in the sand, and generally inhabit the ocean; I have seen, however, a delicate *Macra* in the cabinet of Dr. Ruschenberger, U. S. N., which he procured alive in fresh water in Tombez river, Peru; the species, in this respect, having the peculiar habits of the *Rangia*.

Thirty-four recent species are known; and in the Tertiary strata of Europe, Deshayes has noticed fourteen; six occur in the Pliocene strata of Virginia and Maryland, and three in the Eocene of Alabama.

MACRA DEAURATA.

TAB. XIV, *fig.* 1.

SPECIFIC CHARACTER.

Shell subovate, solid, compressed; posterior side short, truncated, and somewhat angular; anterior

side produced, with the margin rounded; lateral teeth with regular transverse striæ; the posterior tooth elongated.

SYNONYMES.

MACTRA DEAURATA, *Turton, Conch. Insul. Brit.*
p. 71, pl. 5, fig. 8.

MACTRA ARCTATA, *nobis, Journ. Acad. Nat.*
Sciences, vol. 6, p. 257, pl. 11, fig. 1.

OBSERVATIONS.

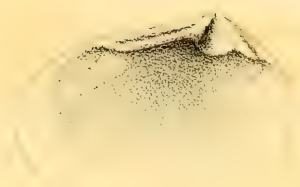
This species has not been found south of Rhode Island; I hesitated to publish it as new, thinking it might be the *deaurata* of Turton, whose description of it, however, was so imperfect, that I could not identify it. Subsequently, by reference to the beautiful figure quoted above, I was satisfied of the identity. It possesses the delicate epidermis, reflecting a metallic lustre, as described by Dr. Turton.

MACTRA TELLINOIDES.

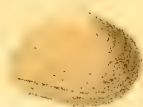
TAB. XIV, *fig. 2.*

SPECIFIC CHARACTER.

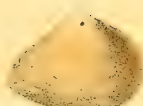
Shell ovate, thin, inflated, with numerous raised concentric striæ; anterior end subcuneiform, slightly



1



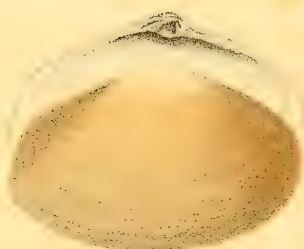
2



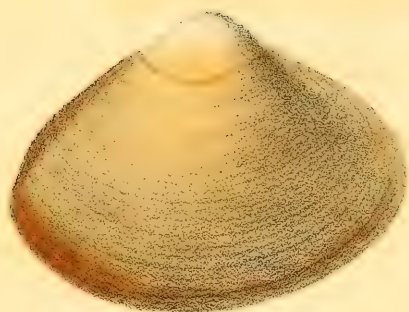
4



5



3



6

compressed and sinuous; lateral teeth distinct on one valve, on the other obsolete.

SYNONYME.

MACTRA TELLINOIDES, *nobis, Journ. Acad. Nat. Sciences, vol. 6, p. 258, pl. 11, fig. 2, 3.*

OBSERVATIONS.

Inhabits the whole coast, and is a fossil of the Pliocene strata of Virginia. Its exterior is not unlike a Tellina.



MACTRA FRAGILIS.

TAB. XIV, *fig. 3.*

SPECIFIC CHARACTER.

Shell oblong-oval, very slightly wrinkled, excepting upon the margin; umbo hardly prominent; two strong distant lines from the apex to the posterior extremity; epidermis pale brownish yellow, tinged with ferruginous; within white, highly polished.

SYNONYMES.

MACTRA FRAGILIS, *Chem. v. 6, p. 236, t. 24, fig. 235.*

MACTRA OBLONGA, *Say, Journ. Acad. Nat. Sci. vol. 2, p. 310.*

OBSERVATIONS.

This shell is well represented by the figure quoted from Chemnitz. The *M. dealbata* is considered by several authors to be the same species, but the remarkable lines in the *fragilis* are not represented in any of the figures of the former, although the outline is the same in both.

Mr. Say found this species on one of the sea islands of Georgia. It is not uncommon on the coast of South Carolina.

MACTRA LATERALIS.

TAB. XIV, *fig.* 4, 5.

SPECIFIC CHARACTER.

Shell triangular, very convex, of a smooth appearance, but with minute concentric wrinkles; lateral margins flattened, cordate, with a rectilinear, sometimes concave profile; one margin rounded at the extremity, the other longer and less obtuse; umbo nearly central, prominent.

SYNONYME.

MACTRA LATERALIS, *Say, Journ. Acad. Nat. Sci.*
vol. 2, *p.* 309.

OBSERVATIONS.

A very common species on almost all parts of our coast.—*Say*.

I found it abundantly near Mobile Point, on the the shore of the Gulf of Mexico, and also in the Newer Pliocene strata of Maryland. It resembles *M. subtruncata*, Montagu.

MACTRA NUCLEUS.

TAB. XIV, *fig.* 6.

SPECIFIC CHARACTER.

Shell small, triangular, thick, with an obsolete concentric angle ; umbones flattened ; apices very acute ; lateral teeth robust ; within pale brown.

SYNONYME.

MACTRA NUCLEUS, *nobis*, *Journ. Acad. Nat. Sci.*
vol. 6, *p.* 258, *pl.* 11, *fig.* 4.

OBSERVATIONS.

This small species is distinguished from the preceding by its solidity and its angular surface, and by

the thickness of the lateral teeth ; it is also shorter in proportion to the height.

Found at Long Branch, New Jersey, by William S. Warder.

MACTRA SOLIDISSIMA.

TAB. XIV, *fig.* 7, and TAB. XV.

SPECIFIC CHARACTER.

Shell large, solid, subovate or subtriangular ; cardinal fosset very large, cordate ; lateral teeth transversely striated ; muscular impressions very large.

SYNONYMES.

MACTRA SOLIDISSIMA, *Chem. Dill. Wood, Index Test.* pl. 6, *fig.* 22.

M. SOLIDA, Var. B. *Gmel.*

M. PROCERA, *Solander.*

M. GRANDIS, *Soland. Wood, Index Test.* pl. 6, *f.* 19.

M. GIGANTEA, *Lam. An. sans vert.* vol. 5, *p.* 472.

M. SIMILIS, *Say, Journ. Acad. Nat. Sciences*, vol. 2, *p.* 309.

OBSERVATIONS.

This is much the largest species known, measuring seven inches in length.



It is peculiarly abundant on the coast of New Jersey, and is generally used as a scoop in the vicinity. It is unknown on the coast south of Virginia, or at least never attains more than half the size, if it be the same species ; it is, however, supposed to be distinct ; it is more elongated than *M. similis*, and occurs on the coast of New Jersey, in company with the present species. The name *Reveneli* might be applied to it, as Professor Ravenel, of Charleston, first detected the difference between it and the *solidissima*.

SOLEMYA.

GENERIC CHARACTER.

Shell equivalve, inequilateral, oblong, obtuse at the extremities ; epidermis strong, shining, continued beyond the margins ; substance of the shell extremely thin, fragile ; beaks not prominent ; hinge with an apophysis in each valve, dilated, compressed, very oblique, somewhat concave, and receiving the cartilage ; muscular impressions two, distant ; palleal impression without a sinus ; ligament exterior.

OBSERVATIONS.

This singular genus is possessed of such extreme tenuity of the testaceous substance, that a strong epi-

dermis seems absolutely essential to preserve it, and afford the requisite security to the animal. It is closely related to *Solecurtus* and *Solen*; but Lamarck thinks its characters still more resemble those of *Anatina*. Three recent species only are known, and none fossil.

SOLEMYA VELUM.

TAB. XVI.

SPECIFIC CHARACTER.

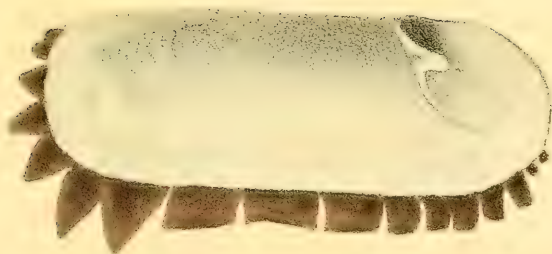
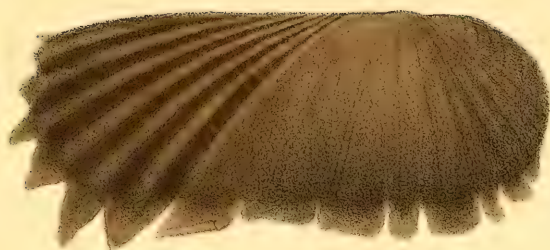
Shell oblong, convex, with both extremities obtusely rounded; ribs about eighteen, with intermediate lines; apophysis arcuated beneath.

SYNONYME.

SOLEMYA VELUM, *Say, Journ. Acad. Nat. Science, vol. 2, p. 317.*

OBSERVATIONS.

This large species inhabits the coasts of Massachusetts and Rhode Island, and that of South Carolina; it is hardly ever seen when full grown, though young specimens are often taken in abundance. The shell



is so thin that the contraction of the epidermis, in drying, invariably cracks it.

I have considered this the adult of *S. velum*, perhaps incorrectly, as Col. Totten, who has better opportunities of making comparisons, thinks it is distinct, and has described it under the name of *S. borealis*, in the American Journal of Science and Arts, vol. 27, p. 366.

IPHIGENIA.

GENERIC CHARACTER.

Shell equivalve, triangular, valves closed ; hinge with two teeth in the right valve, united above ; anterior one small, acute, united with the margin ; posterior tooth triangular and bifid ; left valve with two teeth, the anterior one subcompressed ; posterior tooth linear ; muscular impressions two, distant, large ; pal-leal impression, with a profound sinus, extending much beyond the middle of the valve ; cartilage marginal ; ligament exterior.

OBSERVATIONS.

This genus, embracing but few recent species, has been separated from the *Donax* of Linnæus, to which,

however, it is closely allied. Lamarck termed it *Capsa*, appropriating the term which Bruguiere had given to a genus for the reception of *Venus deflorata* of Gmelin, and transferred that shell to his genus *Sanguinolaria*. Ferrusac has since given the present genus the name of *Donacina*, but I presume that which I have adopted has priority.

IPHIGENIA LÆVIGATA.

TAB. XVII, *fig.* 1.

SPECIFIC CHARACTER.

Shell oblongo-trigonal, convex, inequilateral; with minute radiating striæ; posterior side shortest, compressed; lateral margins flattened; beaks prominent, violaceous; epidermis pale olivaceous; within bluish white.

SYNONYMES.

IPHIGENIA LÆVIGATA, *Schum. Essai d'un nouveau Syst. p.* 156.

DONAX LÆVIGATA, *Gmel.*

CAPSA LÆVIGATA *Lam. An. sans vert. vol.* 5, *p.* 553.

OBSERVATIONS.

This shell, I believe, has not been hitherto found north of Florida, where my friend Dr. William Blanding obtained a few bleached valves. The figure is from a perfect specimen in the cabinet of Dr. R. E. Griffith, who is not certain that it came from the coast of the United States, although the circumstances under which he obtained it favour the supposition.

CAPSA.

GENERIC CHARACTER.

Shell equivalve, inequilateral, oblong; hinge with one oblique tooth in the right valve; left valve with two teeth; the anterior one largest, direct, subtriangular and slightly bifid; muscular impressions two, distant; palleal impression with a profound sinus, extending beyond the middle of the valves; cartilage situated in an exterior groove.

OBSERVATIONS.

So much does this genus resemble *Iphigenia* that the two have often been confounded. The former may be distinguished by the cartilage being placed on the longer side of the shell, and by a slight though characteristic difference in the cardinal teeth.

It approaches the *Psammobiæ*, to which Sowerby has referred it, whereas *Iphigenia* has more affinity to *Donax*. It embraces but one recent species, a common and well known shell.

CAPSA DEFLORATA.

TAB. XVII, *fig.* 2.

SPECIFIC CHARACTER.

Shell ovato-oblong, convex, with numerous radiating rugose striæ, strongest on the posterior margin, where they are somewhat tuberculated.

SYNONYMES.

VENUS DEFLORATA, *Lin.*

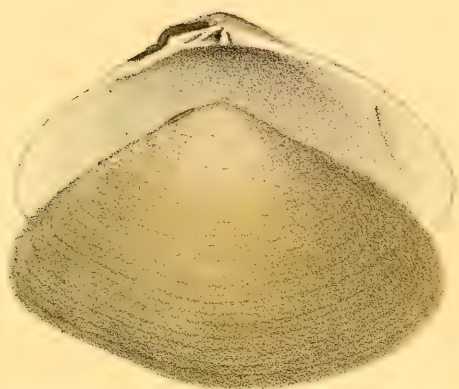
CAPSA RUGOSA, *Brug.*

SANGUIOLARIA RUGOSA, *Lam. An. sans vert. vol. 5,*
p. 511.

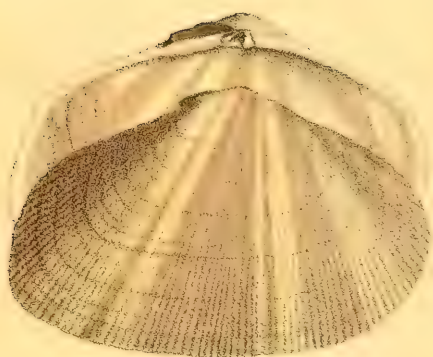
CAPSULA RUGOSA, *Schum. Essai d'un nouveau Syst.*
p. 130.

PSAMMOBIA DEFLORATA, *Turton, Conch. Ins. Brit.*
p. 93.

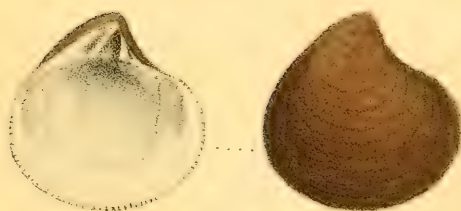
CHAMA DIFFUSIOR, *Lister, Conch. tab. 425, fig.*
273.



1



2



3

OBSERVATIONS.

Inhabits the Indian and American seas.—*Lam.*

On the American coast it does not occur north of the peninsula of Florida. It is a pretty shell, generally violaceous, with broad yellowish rays, but very variable in its tints.

ASTARTE.

GENERIC CHARACTER.

Shell suborbicular, equivalve, inequilateral ; hinge with two strong diverging teeth on one valve, and on the other two very unequal teeth ; ligament exterior ; pallear impression entire.

OBSERVATIONS.

Sowerby instituted this genus by the name of *Astarte*, which was subsequently published by Lamarck, who termed it *Crassina*, and referred it to his *Nymphacees Tellinaires*. Its true place, we think, would be between *Venus* and *Cardita*, as it approaches the former by its hinge, and the latter by the entire impression of the mantle.

The recent species are few in number ; but the

fossil ones are numerous in the Tertiary strata ; two are found in the Eocene strata of Alabama, and five in the Pliocene of Virginia and Maryland.

ASTARTE CASTANEA.

TAB. XVII, *fig.* 3.

SPECIFIC CHARACTER.

Shell suborbicular or subtriangular, thick ; beaks prominent and nearly central ; lunule excavated, lanceolate ; surface with minute concentric wrinkles and larger undulations ; epidermis chestnut brown ; inner margin regularly crenulated.

SYNONYMES.

VENUS CASTANEA, *Say, Journ. Acad. Nat. Science, vol. 4, p. 273.*

ASTARTE CASTANEA, *Say, American Conch. pl. 1.*

OBSERVATIONS.

Common on the coasts of New Jersey and Rhode Island. It is nearly allied to *A. danmoniensis*, but we agree with Say in considering it a distinct species.

INDEX.

	<i>page</i>	<i>pl.</i>	<i>fig.</i>
Pecten Magellanicus, - - -	6	1	1
concentricus, - - -	8	1	2
purpuratus, - - -	10	2	1
Pealii, - - -	12	2	2
ornatus, - - -	13	2	3
Lima glacialis, - - -	16	3	1
squamosa, - - -	17	3	2
Solecurtus fragilis, - - -	19	4	1
costatus, - - -	21	4	2
Caribæus, - - -	22	4	3
Solen ensis, - - -	27	5	1
viridis, - - -	28	5	2
Nucula limatula, - - -	30	6	1
proxima, - - -	31	6	2
acuta, - - -	32	6	3
Sanguinolaria fusca, - - -	34	7	1
lusoria, - - -	35	7	2
Petricola pholadiformis, - - -	37	7	3
Cardita borealis, - - -	39	8	1
incrassata, - - -	39	8	2
Mya arenaria, - - -	42	9	1
Thracia declivis, - - -	44	9	2
Lutraria canaliculata, - - -	46	10	1
lineata, - - -	47	10	2
Pandora trilineata, - - -	49	11	1
Lyonsia hyalina, - - -	51	11	2
Lepton fabagella, - - -	53	11	3
Artemis concentrica, - - -	55	12	
Rangia cyrenoides, - - -	57	13	
Mactra deaurata, - - -	59	14	1
tellinoides, - - -	60	14	2
fragilis, - - -	61	14	3
lateralis, - - -	62	14	4
nucleus, - - -	63	14	6
solidissima, - - -	64	14	7
Solenya velum, - - -	66	16	
Iphigenia kevigata, - - -	68	17	1
Capsa deflorata, - - -	70	17	2
Astarte castanea, - - -	72	17	3

1521^①

SMITHSONIAN INSTITUTION LIBRARIES



3 9088 00595 0001